

Epitomes

Important Advances in Clinical Medicine

Plastic Surgery

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The Council on Scientific Affairs of the California Medical Association presents the following epitomes of progress in plastic surgery. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, as to both scientific fact and important clinical significance. The items are presented in simple epitome, and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist busy practitioners, students, researchers, and scholars to stay abreast of these items of progress in plastic surgery that have recently achieved a substantial degree of authoritative acceptance, whether in their own field of special interest or another.

The items of progress listed below were selected by the Advisory Panel to the Section on Plastic Surgery of the California Medical Association, and the summaries were prepared under the direction of Drs Hardesty and Zarem and the Panel.

Advances in Microvascular Free Tissue Transfer

PERHAPS MORE THAN ANY other technique developed in the recent past, microvascular surgery has expanded the horizons of reconstructive surgery. Aided by the Western experimental background and the considerable Chinese clinical experience in microsurgery, microvascular free tissue transfer has gradually evolved from being a procedure of last resort to becoming the first choice for reconstruction. Improved success rates, shorter operative time, and reduced patient morbidity have widened the indications for the procedure, which now include oncologic patients following resection and radiation, traumatic defects and congenital defects such as moebius syndrome.

The greatest benefit of a microsurgical approach to head and neck reconstruction is improved blood supply, to both the tissue being transferred and the recipient site. The increased blood supply has improved tissue survival and wound healing under such compromised circumstances as prior radiation and infection.

Despite the slightly longer initial operating time and the special microsurgical expertise required, free flaps are important options in many patients desiring breast reconstructions. When there is not enough tissue or the tissue has been irradiated and is unable to be easily transferred from a nearby or local area, a vascularized pedicle is obtained with the artery and vein anastomosed to vessels in the affected area, bringing skin, soft tissue (e.g. muscle, omentum) and even bone to reconstruct this region. The technique can be done with a highly acceptable failure rate (1.8%) and gratifying results.

In most cases of local flap use, the wounds have been partially devitalized by resection or radiation. Flaps with

marginal circulation, while they may survive, are unable to resist the effects of bacterial contamination. Salivary leaks rapidly lead to wound breakdown and orocutaneous fistulae. By contrast, well-vascularized tissue with an abundant blood supply contributes greatly to the healing potential of the repair. An important example is the ability of vascularized bone to unite after mandible reconstruction, despite both radiation and bacterial contamination.

Ischemic lesions of the legs, ankles, and feet leading to soft tissue and bony involvement are major problems, particularly in diabetic patients. Microsurgical techniques can facilitate revascularization of extremely small, badly diseased distal vessels of the leg and foot in many of these patients. The addition availability of microsurgical free tissue transfer to reconstruct major soft tissue and bony wounds in these conditions has resulted in salvage of limbs that otherwise would have been amputated.

As success at the recipient site has now become so routine, further outcome improvement has been directed toward enhancing the appearance and residual function at the donor site.

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